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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/362,808      | 07/28/1999  | HONGYONG ZHANG       | 07977/088002        | 7320             |

20985 7590 05/01/2002

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EXAMINER

RAO, SHRINIVAS H

| ART UNIT | PAPER NUMBER |
|----------|--------------|
| 2814     |              |

DATE MAILED: 05/01/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                           |                  |
|------------------------------|---------------------------|------------------|
| <b>Office Action Summary</b> | Application No.           | Applicant(s)     |
|                              | 09/362,808                | ZHANG, HONGYONG  |
|                              | Examiner<br>Steven H. Rao | Art Unit<br>2814 |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM  
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1) Responsive to communication(s) filed on 26 February 2002.  
 2a) This action is FINAL.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4) Claim(s) 1-40 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 1-40 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 11) The proposed drawing correction filed on \_\_\_\_\_ is: a) approved b) disapproved by the Examiner.  
 If approved, corrected drawings are required in reply to this Office action.  
 12) The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
 \* See the attached detailed Office action for a list of the certified copies not received.  
 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
 a) The translation of the foreign language provisional application has been received.  
 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

1) Notice of References Cited (PTO-892)                    4) Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.  
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)                    5) Notice of Informal Patent Application (PTO-152)  
 3) Information Disclosure Statement(s) (PTO-1449) Paper No(s) 11.                    6) Other: \_\_\_\_\_

***Response to Amendment***

Applicants' amendment filed February 14, 2002 has been entered on February 26, 2002.

Therefore claims 1,2,10,14,19 and 24 as amended by the amendment and claims 3-9,11-13,15-18, 20-23 and 25-37 as previously recited and presently newly added claims 38-40 are currently pending in the application.

***Claim Rejections - 35 USC § 103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1,3,5 and 31-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fu and Sasaki ( both previously applied), and further in view of Zhang et al. ( U.S. Patent No. 6,096,581, herein after Zhang).

Fu and Sasaki disclose substantially all the structure set forth in the claims except," the thickness of the first interlayer insulating film is less than one-third of the total thickness of the first and second interlayer insulating films."

However, Zhang, a patent from the same filed of endeavor, discloses at least in col. 10 lines 13-19 that the thickness of silicon oxide film is in the overlapping range of about one third to two times the value of the thickness of the anodic oxide film, and gate electrode and interconnect. i.e. the thickness of the silicon oxide (second insulating layer ) is less than a third of the thickness of only the anodic oxide film ( first insulating layer-when the thickness of the gate electrode and interconnect are not included) and

the silicon oxide film to compensate for variations in the dimensions of the device elements.

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to include Zhang's overlapping ration of about 1/3 to two times the thickness between the second insulating layer and the total of first and second insulating layer thickness in Fu and Sasaki's devices to compensate for variations in the dimensions of the device elements and provide a device with uniform characteristics..

Claims 2,6-18,33 and 34 are rejected over Fu ,Sasaki and Lin ( both previously applied), and further in view of Zhang et al. ( U.S. Patent No. 6,096,581, herein after Zhang).

Fu ,Sasaki and Lin disclose substantially all the structure set forth in the claims except," the thickness of the first interlayer insulating film is less than one-third of the total thickness of the first and second interlayer insulating films." ( see discussion above wherein Zhang discloses this element).

Fu, Sasaki and Lin also do not disclose, " the semiconductor layer formed over the substrate having an insulating surface"

However Zhang in col. 9 lines 26-33 describes the formation an insulating surface formed on the substrate and in col. 9 lines 34-38 describes the formation of semiconductor layer on the afore mentioned insulating surface.

The motivation to combine Fu, Sasaki and Zhang has already been mentioned above.

Claims 38-40 recite the same limitation stated above namely, “, the thickness of the first interlayer insulating film is less than one-third of the total thickness of the first and second interlayer insulating films.” ( see Zhang’s description stated above).

Therefore all pending claims 1-40 are rejected for reasons previously set out and those stated above.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

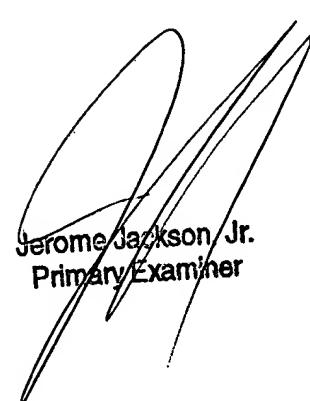
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven H. Rao whose telephone number is 703-306-5945. The examiner can normally be reached on M-F, 8.00 to 5.00.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703- 308-0956.

Steven H. Rao

Patent Examiner

April 27, 2002



Jerome Jackson, Jr.  
Primary Examiner